themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference. *See* M.P.E.P. § 2143. Moreover, "all claim limitations must be taught or suggested." M.P.E.P. § 2143.03.

Wisotzki

Claims 30-56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,900,545 ("Wisotzki et al."). Office Action at pp. 3-5. Applicants respectfully traverse this rejection.

Wisotzki is directed to a hair treatment composition for regenerating hair damaged by split ends. Col. 1, lines 8-11. The Examiner notes that Wisotzki teaches in col. 6, lines 3-5, "[i]n every case, it was found that the hairs had been regenerated, i.e., the split-ends had been partially repaired." Office Action at p. 4. From this teaching, the Examiner alleges that there is no distinction "between the prior art and the instant invention."

Applicants respectfully disagree. The present claims feature several distinctions from Wisotzki. First, Wisotzki fails to teach heating the keratinous fiber. In the Examples of Wisotzki, the hair-regenerating process involves applying the undiluted preparation, after which the hairs are rinsed, dried, and combed. Col. 5, lines 65-68. From this description, there is no heating requirement. Second, because there is no heating requirement, Wisotzki cannot teach that the composition must be applied prior to the heating or during the heating.

The Examiner further alleges that by "repairing" split ends, the compositions of Wisotzki causes repairing by means of increasing the α-structure and/or tensile strength of the damaged keratinous fiber, as claimed. Applicants submit that the Examiner is

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applying an improperly broad definition to "repair." Although an examiner must interpret a claim as broadly as its terms reasonably allow, words of the claim must be given their plain meaning "unless applicant has provided a clear definition in the specification." M.P.E.P § 2111.01. It is also a well settled tenet of patent law that an applicant may be his own lexicographer as long as the meaning given to a term is not repugnant to the term's well-known usage. M.P.E.P § 2111.02. "Any special meaning assigned to a term 'must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention.'" M.P.E.P § 2111.01.

Here, Applicants have defined "repair" in the claim itself (claim 30). Thus, to establish a *prima facie* case of obviousness, the Examiner must show a teaching or suggestion in the art of a composition that carries out the claimed repair.

Moreover, Applicants invention is directed to repair following extrinsic damage. Extrinsic damage is caused by one or more conditions such as sun, chemical damage, and heat. Specification at p. 6, last line to p. 7, line 1. In the cortex, coiled protein molecules are arranged in a pattern having a degree of crystallinity. Id. at p. 7, 11-14. When normal hair experiences extrinsic damage, "a decrease in the crystallinity or α-structure and a decrease in the disulfide bonds is observed." Id. at p. 3, lines 7-9.

In contrast; Wisotzki teaches restoring damage caused by split ends. Wisotzki at col. 1, lines 8-12. According to Wisotzki, "[s]plit ends are caused, among other reasons, by severe mechanical stressing of the hair, for example by frequent brushing, backcombing or combing against a high resistance." Id. at col. 1, lines 16-19 (added

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emphasis). Thus, Wisotzki teaches restoration of hair subjected to mechanical damage, unlike the damage required in the claimed invention.

Applicants submit an article entitled "Mechanism of split-end formation in human head hair" ("Swift"), to further show the distinction between restoring damaged hair according to Wisotzki, and repair following extrinsic damage, as claimed. Journal of the Society of Cosmetic Chemists, Swift, J.A., Vol. 48, pp. 123-126, 1997. Swift discusses in detail the effect of shear stresses on hair. See Abstract. Upon being subjected to shear stress, hair fibers suffer a "localized longitudinal shear fracture ... favored to take place about the major axial diameter of each hair." Id. at sentence bridging pp. 124 and 125. Nowhere among the numerous scanning electron microscopy analyses (SEM) does Swift discuss a decrease in crystallinity or α-structure. Rather, Swift teaches that split end damage is actually a break occurring in a direction parallel to the length of the hair fiber. Thus, Swift teaches mechanical damage and not extrinsic damage, which is consistent with the teachings of Wisotzki.

As Wisotzki does not teach or suggest protecting keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage, or other limitations as outlined above, Applicants submit that a *prima facie* case of obviousness has not been established.

Accordingly, Applicants respectfully request withdrawal of this rejection.

Koga

Claims 30-56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,660,838 ("Koga et al."). Office Action at pp. 5-7. Applicants respectfully traverse this rejection.

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Koga is directed to "xylobiose-containing skin preparations." *See* Abstract. The compositions of Koga may also reduce "excessive roughness and dryness of hair to give a natural oiliness." Col. 1, lines 10-14. In supporting the rejection, the Examiner alleges:

> Rough dry hair is usually brittle, weak hair. As is generally known, hair that is moist or oily tends to be stronger in nature than rough, dry hair."

Office Action at p. 6. Based on these statements, the Examiner believes there is no "distinction observed between the prior art and the instant invention." *Id.*

Applicants note that the Examiner has not set forth any evidence to support these very broad allegations. As discussed in the specification, the "mechanical properties of the hair are determined by the cortex." P. 2, second paragraph. The cuticle layers, on the other hand, "are located on the hair surface ... and form layers around the hair cortex." P. 2, 1st paragraph. It is not clear from Koga, whether the "roughness" is attributed to the cuticle, the cortex, or any other part of the hair. Thus, without establishing that Koga's compositions affect the cortex, which in turn determines the mechanical properties of the hair, the Examiner has no basis for equating roughness with brittle weak hair. A "factual question of motivation is material to patentability, and [can] not be resolved on subjective belief and unknown authority." *In re Lee*, 277 F.3d 1338, 1343-1344 (Fed. Cir. 2002) (added emphasis).

Applicants also submit that one of ordinary skill in the art would readily recognize that "rough, dry hair" is not necessarily weak hair. Under conditions of low humidity, strong hair can be rough and dry.

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Additionally, Applicants submit that Koga does not teach heating the keratinous fiber, or applying the composition prior to or during the heating. As each limitation is not taught or suggested by Koga, a *prima facie* case of obviousness has not been established.

Accordingly, Applicants respectfully request withdrawal of this rejection.

Syed

Claims 30-56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,641,477 ("Syed et al."). Office Action at pp. 7-9. Applicants respectfully traverse this rejection.

Syed is directed to a process for relaxing hair fibers with a lanthionizing composition. Col. 2, lines 21-27. The composition comprises a hydrogenated starch hydrolysate and/or a sugar. *Id.* Preferably, the sugars are sucrose or sorbitol. Col. 3, lines 7-8.

Evidence of a suggestion or motivation to modify reference teachings must be "clear and particular." *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Applicants submit that a clear and particular suggestion has not been shown in Syed. Syed merely teaches the use of "hydrogenated starch hydrolysate and/or a sugar." Among the representative sugars listed in col. 3, lines 5-8, only one sugar can be considered a C3 to C5 monosaccharide or derivative thereof. To arrive at the claimed invention, one of ordinary skill in the art would have to first choose a sugar from "hydrogenated starch hydrolysate and/or a sugar." Then, one would have to pick out the single C3 to C5 monosaccharide or derivative thereof taught by Syed, thereby ignoring the preferred embodiments of sucrose or sorbitol. As shown in numerous examples in the

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specification, C3 to C5 monosaccharides or derivatives thereof provide unexpectedly good results, compared to hexoses. *See* e.g., Tables 6-14.

Thus, Applicants submit that Syed does not clearly and particularly guide one of ordinary skill in the art to the sugar as claimed. Without such clear and particular evidence, a *prima facie* case of obviousness has not been established.

Additionally, Applicants submit that Syed does not teach (1) heating the keratinous fiber, (2) applying the composition prior to or during the heating, or (3) protecting or repairing the keratinous fiber, as claimed. As each limitation is not taught or suggested by Syed, for at least these additional reasons, a *prima facie* case of obviousness has not been established.

Accordingly, Applicants respectfully request withdrawal of this rejection.

Felardos

Claims 30-56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,866,111 ("Felardos et al."). Office Action at pp. 9-11. Applicants respectfully traverse this rejection.

Felardos is directed to mascara compositions comprising, among other ingredients, at least one ester of fatty acid and of sucrose. Col. 1, lines 59-64. Additionally, the composition can include at least one ester of monosaccharide, which is preferably an alkylglucose ester. Col. 2, lines 48-62.

Applicants submit that one of ordinary skill in the art would have to pick and choose among a large variety of possibilities to arrive at the claimed invention. Felardos directs one of ordinary skill in the art to sucrose esters. The additional ingredient of at least one ester of monosaccharide is optional. Even if the optional

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monosaccharide ester is chosen, then one of ordinary skill in the art would have to wade through the list of candidate monosaccharides in col. 2, lines 51-58, the majority of which are hexoses and heptoses. Moreover, Felardos' preferred embodiments are not C3 to C5 monosaccharides or derivatives thereof, but rather an alkylglucose ester. As stated above, numerous examples in the specification show that C3 to C5 monosaccharides or derivatives thereof provide unexpectedly good results, as compared to hexoses. *See* e.g., Tables 6-14.

Finally, Applicants submit that Felardos does not teach, (1) heating the keratinous fiber, (2) applying the composition prior to or during the heating, or (3) protecting or repairing the keratinous fiber, as claimed. As each limitation is not taught or suggested by Felardos, for at least these additional reasons, a *prima facie* case of obviousness has not been established.

Accordingly, Applicants respectfully request withdrawal of this rejection.

III. Conclusion

Applicants respectfully request the reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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